| Izu et al. | | | |
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| [54] | | CONTINUOUS AMORPHOUS SOLAR CELL PRODUCTION SYSTEM | |
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| [73] | Assignee: | Sovonics Solar Systems, Solon, Ohio | |
| [21] | Appl. No.: | 340,630 | |
| [22] | Filed: | Jan. 19, 1982 | |
| Related U.S. Application Data | | | |
| [60] | Division of Ser. No. 240,493, Mar. 16, 1981, Pat. No. 4,410,558, which is a continuation-in-part of Ser. No. 151,301, May 10, 1980, Pat. No. 4,400,409. | | |
| [51] [52] | | | |
| [58] | Field of Sea | 118/718, 719, 725, 50.1, 118/720, 721; 427/38, 39, 85, 86 | |
| [56] | References Cited | | |
| U.S. PATENT DOCUMENTS | | | |
| | 2,702,760 2/1 3,012,904 12/1 | 955 Barth | |

3,205,855 9/1965 Auly 118/721

United States Patent [19]

[11] Patent Number:

4,519,339

[45] Date of Patent:

May 28, 1985

| 3,969,163 4,328,258 | 7/1976 5/1982 | Wakefield | | |
|--------------------------|------------------|-----------|--|--|
| FOREIGN PATENT DOCUMENTS | | | | |
| 37-11506 2033355 | 8/1962 5/1980 | Japan | | |

Primary Examiner—John H. Newsome Attorney, Agent, or Firm—Marvin S. Siskind

57] ABSTRACT

The continuous production of solar cells by the glow discharge (plasma) deposition of layers of varying electrical characteristics is achieved by advancing a substrate through a succession of deposition chambers. Each of the chambers is dedicated to a specific material type deposition. The chambers are mutually isolated to avoid the undesired admixture of reaction gases therebetween. Each plasma deposition is carried out in its glow discharge area, chamber, or chambers, with isolation between the plasma regions dedicated to different material types. Masking, mechanical or lithographic, can be employed relative to the substrate to cause the deposition in the desired configuration. After the semiconductor deposition is complete, top contact and antireflection layer or layers are deposited, followed by a protective lamination.

8 Claims, 7 Drawing Figures

